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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Feng Liang et al.  
Application No. : 09/683,018  
Confirmation No. : 6123  
Filed : November 8, 2001  
For : ELECTRIC MACHINE WITH COOLING RINGS

Examiner : Tran N. Nguyen  
Art Unit : 2834  
Docket No. : 130209.450C1  
Date : December 10, 2002

Box Non-Fee Amendment  
Commissioner for Patents  
Washington, DC 20231

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RESPONSE

Commissioner for Patents:

This is a Response to the Office Action mailed September 11, 2002, in which a three (3) month Shortened Statutory Period for Response has been set, due to expire December 11, 2002. There were one (1) independent claim and a total of fifteen (15) claims paid for in the application. No new matter has been added to the application. No fee for additional claims is due by way of this Amendment. The Commissioner is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment to our Deposit Account No. 19-1090. Claims 1-15 are pending.

Obviousness-Type Double Patenting Rejections

Claims 1-4, 6-7 and 12-13 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 of U.S. patent 6,445,095 to Liang et al., in view of U.S. patent 3,688,137 to Filhol. Claims 1-4, 6-7 and 12-13

were also rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 of U.S. patent 6,445,095 to Liang et al., in view of U.S. patent 5,053,658 to Fakler et al. Claims 5, 7-8, 9-11 and 14-15 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 of U.S. patent 6,445,095 to Liang et al. and Filhol or Fakler, as applied in the rejections against the base claims, and further in view of the level of ordinary skills in the art. Finally, claims 1-15 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 of U.S. patent 6,445,095 to Liang et al., in view of the level of ordinary skills in the art.

Initially, we note that the judicially created doctrine of "obviousness-type" double patenting exists to prevent an applicant from extending the patent monopoly by claiming obvious variations of his or her invention in more than one patent. MPEP804. There are fundamental differences between prior art based rejections under 35 U.S.C. 103 and non-statutory (*i.e.*, "obviousness-type") double patenting rejections, thus the application of the doctrine must *not* be confused with prior art based rejections. MPEP804.II.B.1.

Since the purpose underlying the doctrine is to prevent the extension of the patent monopoly, it is inappropriate to base an obviousness-type double patenting rejection on a reference that is neither *commonly owned* nor includes *at least one inventor in common*. MPEP804.I.A.

Obviousness-type double patenting rejections *must* be based *on the claims* of the commonly owned patent, *not on the disclosure*. MPEP804.II.B.1. Thus, what a reference discloses is *not* relevant to such a rejection, rather the Examiner must compare the *claimed* subject matter in the *pending application* with the *claimed* subject matter in the *issued patent*. *Id.* This is consistent with the fundamental rationale underlying the doctrine, to prevent the extension of the patent monopoly based on obvious variations to the claimed subject matter.

Since the Examiner must compare subject matter claimed in the application with the *claimed subject matter* in a commonly owned patent, it is completely improper to base an obviousness-type double patenting rejection on a combination of patents. While teachings of patents may be combined under 35 U.S.C. 103, there is *no* basis or logical rationale under the doctrine for the *combining of claims* from different patents. This is true even if both patents of

the combination were commonly owned with the application, since in such a situation the pending claims would have to be evaluated against the *claims of each of the patents individually*. Thus, an obviousness-type double patenting rejection is inappropriate if the application is not *claiming* an obvious variant of the subject matter *claimed in a single, commonly owned patent*.

With respect to the first three "obviousness-type" double patenting rejections, the Examiner relies on the purported combination of '095 patent with Filhol and/or Fakler. As discussed above, an obviousness-type double patenting rejection requires a comparison of the claims in the application with the claimed subject matter of a patent that is commonly owned or has at least one inventor in common. 1) The Examiner has impermissibly relied on the teachings rather than the claims of the '095 and/or Filhol and/or Fakler. 2) Neither Filhol nor Fakler is commonly owned with the pending application, nor do they have any inventors in common with the pending application, and thus do not constitute proper subject matter for an obviousness-type double patenting rejection. 3) Even if the Examiner had relied on the claims rather than the teachings, it is impermissible to combine the claims of two different patents into a "hypothetical" claim to compare with the claims in the pending application. Further, the need to combine the references constitutes an admission that the subject matter claimed in the pending application is *not* an obvious variation of the subject matter claimed in the '095 patent standing alone.

With respect to the final obviousness-type double patenting rejection (*i.e.*, claims 1-15 under obviousness-type double patenting over claims 1-8 of '095 patent in view of the ordinary level of skill in the art), *the Examiner must make out a prima facie* case on one-way obviousness. MPEP804.II.B.1(a).

The *claims* of the '095 patent are directed to an electric machine employing *laminated* aluminum ring assemblies positioned against the end turns of the windings of a stator core, and a thermally conductive potting material positioned between the end turns and the ring assemblies. In contrast, the *claims* of the present application are directed to a *non-laminated* thermal conductor ring that has a thermal conductivity that is greater than a thermal conductivity of the potting material disposed between the potted stator core end-turn and the housing.

Thus, the claims of the '095 patent clearly *teach away* from the claims of the present invention, specifically reciting a *laminated* structure in contrast to a *non-laminated* structure. The Examiner *must* take the reference in its entirety, and cannot simply ignore

portions that *teach away* from the claimed subject matter or otherwise argue against obviousness. *Bausch & Lomb v. Barnes-Hind/Hydrocurve, Inc.*, 230 U.S.P.Q. 416, 420 (Fed. Cir. 1986). It is impermissible to pick and choose from a reference only so much of it as will support a conclusion of obviousness to the exclusion of other parts necessary to a full appreciation of what the reference fairly suggests to one skilled in the art. *Id* at 419. The courts have long cautioned that consideration *must* be given "where the references diverge and *teach away* from the claimed invention." *Akzo N.V. v. International Trade Commission*, 1 U.S.P.Q.2d 1241, 1246 (Fed. Cir. 1986). In other words, the Examiner has not explained why one skilled in the art would ignore the clear and unambiguous teachings of the claims of '095 patent (*i.e.*, use of a laminated structure).

The non-laminated rings provide a number of unexpected benefits over the laminated rings claimed in the '095 patent. For example, the peak torque capability of the electric motor may be increased, where the electric motor is an induction motor. The maximum torque capability of an induction motor is limited by its leakage inductance. The eddy currents induced in the aluminum conductor rings reduce the leakage inductance, which otherwise limits the maximum torque capability of an induction motor. Thus, use of non-laminated rings may substantially increase the maximum torque capability of induction motors. While the use of non-laminated rings may result in some loss due to eddy currents, applicants have recognized that the losses associated with the copper winding may be significantly reduced because of the significantly lower winding temperature. Thus, while the '095 patent leads one skilled in the art away from the use of non-laminated rings, applicants have recognized a distinct situation in which the use of non-laminated rings is desirable.

The Examiner summarily discounts the non-laminated structure as being "a mere matter of engineering design choice" using the teachings, recited immediately above, from the applicants' *own* specification for the Examiner's basis. The Examiner may *not* rely on the teachings of the applicants' own pending application as the basis of prior art or for motivation to combine references. Further, this "choice of designs" only becomes possible through an appreciation of the applicants' own teachings, and would not otherwise be a consideration to one skilled in the art as informed by the claims, or even the description, of the '095 patent.

Further, there is no teaching or suggestion in the *claims* of the '095 patent with respect to the relative thermal conductivity of the ring and the potting materials. The Examiner contends that the recited *relative* material properties (*i.e.*, relative properties of ring and potting materials) are a simple matter of engineering design choice "since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use." The selection of a known potting compound may be a mere matter of design choice *once the desired properties are known*. However, with respect to the present claim limitation, there is *no teaching in the claims of the '095 patent* with respect to the desired properties of the potting compound, either alone, or relative to the desired properties of the ring. Thus, the subject matter recited in the claim limitation is *not* a mere matter of design choice.

Further, there is no teaching or suggestion in the *claims* of the '095 patent with respect to the shrink fitting of the housing and thermal conducting rings. The Examiner contends that the use of "press fitting or shrink fitting is a matter of obvious engineering design choice based upon a suitable method of mechanical abutment." While the selection of method of manufacturing may be a mere matter of design choice *once the properties of the desired suitable method of mechanical abutment are known*, with respect to the present claim limitation, there is *no teaching in the claims of the '095 patent* with respect to the properties of the desired suitable method of mechanical abutment. Thus, the subject matter recited in the claim limitation is *not* a mere matter of design choice.

#### Conclusion

Overall, the cited references do not singly, or in any motivated combination, teach or suggest the claimed features of the embodiments recited in independent claim 1, and thus claim 1 is allowable. Because the remaining claims depend from allowable independent claim 1, and also because they include additional limitations, such claims are likewise allowable. If the undersigned attorney has overlooked a relevant teaching in any of the references, the Examiner is requested to point out specifically where such teaching may be found.

In light of the above amendments and remarks, Applicants respectfully submit that all pending claims are allowable. Applicants, therefore, respectfully request that the Examiner reconsider this application and timely allow all pending claims. Examiner Nguyen is

encouraged to contact Mr. Abramonte by telephone to discuss the above and any other distinctions between the claims and the applied references, if desired. If the Examiner notes any informalities in the claims, he is encouraged to contact Mr. Abramonte by telephone to expediently correct such informalities.

Respectfully submitted,

Feng Liang et al.

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